DOCUMENT RESUME

ED 201 246 HE 013 720

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TITLE Matching of Students and Universities: A Comparison of Three Chicago Area Universities and Their Student Bodies.
PUB DATE Aug 81
NOTE 38p.; Paper presented at the Annual Meeting of the Society for the Study of Social Problems (Toronto, Ontario, Canada, August 1981). Some tables may be marginally legible.

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Academic Achievement; *College Choice; *College Environment; College Students; Competition; *Enrollment Influences; Family Influence; Higher Education; *Participant Satisfaction; Private Colleges; Reputation; State Universities; *Student Adjustment; Student Attitudes; Student Characteristics; *Student College Relationship; Student Teacher Relationship
IDENTIFIERS Illinois (Chicago); Northeastern Illinois University; Northwestern University IL; University of Chicago IL

ABSTRACT

The extent to which students are well matched with the universities they attend was investigated. The outcome of the choice process was examined with cross-sectional data on students at two private (Northwestern and Chicago) and one public (Northeastern Illinois) Chicago metropolitan area universities. Between and within school variation in satisfaction and academic success revealed differences among the student bodies and suggested explanations for differential satisfaction and success within the different environments. In general, differences were consistent with the stated missions and projected images of the three schools, while the similarities were consistent with past research. There was considerable influence of studying and perceived faculty accessibility on academic satisfaction and grades at all three schools. At Northwestern race and maturation also had effects, at Chicago commitment to general learning and to achieving a higher degree was important, and at Northeastern Illinois sex of student as well as perceived academic reputation was important. As would be expected, students across the three schools differed in their background characteristics, their values and goals, and their responses to their school milieu. Three selection factors were included in the analysis: whether the school attended was the first choice, whether the school's academic reputation was important in choosing it, and whether family tradition or wishes were important. Professor accessibility, academic pressure from peers, and competitiveness were also assessed. (Author/SW)

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MATCHING OF STUDENTS AND UNIVERSITIES: A COMPARISON OF THREE CHICAGO AREA UNIVERSITIES AND THEIR STUDENT BODIES

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HE 013720

Paper prepared for Educational Problems Division session on "The Interrelationships of Educational Research and Educational Policy" at the Society for the Study of Social Problems Annual Meeting, Toronto, Ontario, Canada, August 1981.

MATCHING OF STUDENTS AND UNIVERSITIES: A COMPARISON OF THREE CHICAGO AREA UNIVERSITIES AND THEIR STUDENT BODIES

Abstract

This paper investigates the extent to which students are well-matched with the universities they attend and the extent to which different universities fulfill their promises to be the best choice for specific types of students. In theory, at least, where a student goes to college is the result of the mutual, rational selection by the student of that college from the universe of colleges and by the college of that student from the pool of applicants. The outcome of the choice process is examined with cross-sectional data on students at two private (Northwestern and Chicago) and one public (Northeastern Illinois) Chicago metropolitan area universities. Between and within school variation in satisfaction and academic success reveal differences among the student bodies and suggest explanations for differential satisfaction and success within the different environments. In general, differences are consistent with the stated missions and projected images of the three schools, while the similarities are consistent with past research. There is considerable influence of studying and perceived faculty accessibility on academic satisfaction and grades at all three schools. At Northwestern race and maturation also have effects, at Chicago commitment to general learning and to achieving a higher degree,

and at Northeastern Illinois sex of student as well as perceived academic reputation.

MATCHING OF STUDENTS AND UNIVERSITIES: A COMPARISON OF THREE CHICAGO AREA UNIVERSITIES AND THEIR STUDENT BODIES

1. INTRODUCTION

The purpose of this paper is to help answer the question "Who does well and is satisfied at a given type of college?" We are interested in the extent to which it is students who are well-matched with the universities they attend who show greater achievement and satisfaction.

In theory, at least, where a student goes to college is the result of the mutual, rational selection by the student of that college from the universe of colleges and by the college of that student from the pool of applicants (Moos, 1979). Students, supposedly, try to choose colleges that will best meet their career and intellectual needs, given the amount of time and money they can spend. The college, supposedly, tries to select those students who will benefit most from the particular programs and lifestyle it can offer. (See, for example, Astin, 1977). As a result of the mutual selection process, there is a sorting of students between colleges. Students are not uniformly distributed among colleges by socioeconomic characteristics or intellectual ability (Feldman and Newcomb, 1969:115).

Although relatively little is known about the way students actually choose where they will go to college, the research results that are available are consistent with Feldman and Newcomb's (1969:144) contention that students' choices "may be based on quite inadequate information filtered through blurred images." Porter et al.'s (1979) results showed

that students and their parents in the Ontario secondary schools had a fairly low understanding of how the university system worked. Jackson (1978) found that U. S. students surveyed in 1972-3 tended to apply to only one school and that those applying to more than one school applied to schools resembling each other. Students also tended to apply to places that accepted them. This might be taken as evidence that students do know where they want to go and where they can go. Jackson, though, hypothesizes that the decision to seek information parallels the decision to select a given college or type of college and that the search is incomplete, resulting in a limited number of applications. Budget and time constraints might also lead to a selection of a less than optimal school (see Leslie and Fife, 1974 and Nolfi, et al., 1978, on the effects of financial aid on choice, though also see Davis and Van Dusen, 1978:125). Financial constraints can be overcome, in some cases at least, by financial aid. However, although information on different colleges and universities is available from sources such as The College Handbook, Peterson's Annual Guide to Undergraduate Study, The College Bluebook, and individual colleges' material, students sometimes find it difficult to get information on the actual net cost of attendance (Willett, 1976; College Scholarship Service (CSS), 1976; CSS Advisory Committee, 1976). A misestimation of costs, then, could lead to a student going to a school that was not the one he/she would have chosen otherwise. Constraints imposed by information, time and money could result in an imperfect match between colleges and students. Within any college student body, there is a wide range of socioeconomic characteristics and intellectual abilities (Chickering, 1975:86-104).

In this paper, we look at the outcome of the choice process. With cross-sectional data on students at three Chicago metropolitan area universities, we are able to examine the between and within school variation in satisfaction and academic success. We will be seeing whether students whose interests and background are consistent with the image, strengths, and composition of the colleges they are attending are more satisfied and more successful than their peers. Although using cross-sections means that we will not be able to measure mismatching that leads to dropping out or transferring, we do control for opportunity for leaving by including year at the university (or its equivalent) in our analyses. (For one study of withdrawal and a review of the literature, see National Center for Education Statistics (NCES), 1977a. For a study of transfers, see NCES, 1977b.)

Although the full range of public and private universities is not included here, we have some variation within a category (that of selective private school, represented by Chicago and Northwestern) and across categories (selective private versus public universities, represented by Chicago and Northwestern versus Northeastern Illinois), and we are able to control for geographic location and existence of a graduate program (which all three have). Further, by concentrating on three institutions, we can take into account in greater detail the differences in institutional setting. While the results of our analysis cannot be conclusive, they can provide considerable insight into the student/college matching process. We will look at between school differences by comparing the overall characteristics of students and their attitudes toward and success at the three schools. This procedure gives us an estimate of the school effects,

that is, of how differences across schools are associated with student body composition, attitudes and academic success. We will then look at the within school effects, the extent to which there are differences by school in the factors predicting satisfaction and success. In looking at variation within schools in who does well and is satisfied, we are going beyond Astin's (1977) analysis. Astin, using data on a national sample of students, looked at the effects of student characteristics only as direct effects, net of school characteristics. That is, he did not systematically examine the interaction of school and student characteristics in producing various outcomes. Limiting our analysis to only three schools makes it more convenient to do so.

In the next section, we describe the three universities to give a sense of the variation in institutional context. Following this, we describe the samples of students from which we obtained our data. In the fourth section we present operationalizations of the variables and hypotheses about their levels across schools and effects on satisfaction and success. In the fifth section, we look at the between schools effects. In the sixth section we explore the within school effects of students' characteristics and attitudes on their satisfaction and success. In the last section, we discuss the results and draw conclusions.

2. THE UNIVERSITIES

The three schools on which we have data are Northwestern University, Northeastern Illinois University, and the University of Chicago. Two of these, Northwestern and Chicago, are private, expensive, largely residential, very selective, and have national reputations. Although both are

proud of their intellectual atmosphere and while both have professional schools, Northwestern offers somewhat more technical and applied courses. It has, for example, a School of Education (compared with a Department of Education at Chicago), a School of Journalism, and offers degrees in communicative disorders and engineering. Northwestern tends to place somewhat more emphasis on preparation for graduate professional programs such as law and medicine, while Chicago places somewhat more emphasis on broad humanistic undergraduate education (Northwestern Faculty Planning Committee Report, 1979; University of Chicago, 1974; Northwestern University, 1975). Another difference between the two schools is the degree and nature of social involvement. Northwestern is a member of the "Big Ten" athletic conference, while Chicago places little emphasis on intercollegiate sports. About 30 percent of the Northwestern students belong to sororities and fraternities. Chicago has only fraternities, and limited participation in them. Thus, although Northwestern and University of Chicago are comparable in many respects, they differ slightly in the lifestyle and opportunities they can offer their students.

Northeastern Illinois University provides a striking contrast to the other two universities. It is a state university, with a strong commitment to "nontraditional education" and "has demonstrated leadership in the development of innovative programs for adult learners" (Northeastern Illinois University, 1980). It is a commuter university, with no on-campus housing. Although it offers a traditional liberal arts program, it has several special programs (such as the Board of Governors Degree, which targets mature adults) focused on those who are not traditional undergraduates

and also curricula designed to prepare students for specific types of careers (such as the BA in leisure studies). It offers a greater range of student services to help students who might have difficulty in completing the traditional college program. Tuition is much lower than at the two private universities (Northeastern Illinois University, 1980). Being a public community-oriented university, Northeastern Illinois is much less selective than the other two universities.

A similarity between Northwestern and Northeastern Illinois is that they both have special admissions programs for minority students. While Chicago actively seeks minority students who meet its admission criteria, it applies these criteria uniformly.

The comparison among the universities will be expanded in the fifth section when we look at differences among the schools on levels of the independent as well as the dependent variables.

3. THE SURVEYS

The data on undergraduate students at Northwestern, Chicago, and Northeastern Illinois University were collected in three separate studies conducted in roughly the same manner (for detailed discussions of similarities and differences, see Suelzle, et al., 1980 and Singleton, et al., 1980). Each of the studies involved students in upper division undergraduate introductory research methodology classes as the "staff" who carried through the research process. In each study, the questionnaire design and data processing were carefully monitored and checked by the person in charge of the class.

The Northwestern University study. Data were collected during the

Winter of 1977. An interval sample was drawn from a computerized listing provided by the Registrar's Office, stratified by race, of the students enrolled for the Winter quarter. The final sample included 150 black students and 375 students from the rest of the student body. After a telephone and mail follow-up, the final response rates were 66.1 percent of the nonblack and 51.3 percent of the black samples. The results reported here are weighted to represent the true proportion of black and nonblack undergraduate students in the population.

The Northeastern Illinois University study. Data were collected during the 1979 Winter term from an interval sample drawn from the registration office's list of undergraduate students registered that term. The total sample was 570. With one mail follow-up, 229 (40 percent) completed questionnaires were received. One factor contributing to the low response rate relative to that for the other surveys is that the data collection took place during one of the worst winters Chicago had seen, when many students were simply unable to commute into campus to drop off their questionnaires.[1]

The University of Chicago study. Data were collected during the Spring of 1979 quarter. An interval sample was drawn from the Office of the Registrar's list of undergraduates registered in the College spring quarter. The resulting sample was 509 currently enrolled students.[2] The response rate, after one mail follow-up, was 58.0 percent (295 out of 509).

Comparability of the surveys

All three surveys cover roughly similar topics. However, the surveys were conducted separately without the intention of performing a comparative

analysis. While each individual survey contains questions that could be used to create additional variables with which to explain the satisfaction and success of the students at the school, in doing the comparative study we are restricted to using only the items consistent across studies. In many cases, the questions whose responses we compare are actually the same. In some cases, however, the questions have the same intent but somewhat different wording. Since it is known that even apparently minor changes in wording can change the distribution over responses, the overall results should be viewed as approximate. Question wording is presented in the tables.

Although the three studies were carried out in roughly the same way, there were differences in response rates that seem to be a function of the nature of the follow-up (which was restricted at Northeastern Illinois and Chicago by the university administrations' demand that the student staff not contact directly members of the sample) and by weather (for Northeastern Illinois). To the extent that the students who did respond differ in their distribution over some characteristics, the comparisons, especially with the Northeastern Illinois students, will not give an accurate sense of the differences among the student bodies. The distributions over demographic and background variables (such as sex, race, family income) for the samples correspond well to the distributions available for the universities as wholes. The distributions over grade point averages (GPA) tend to show more people with somewhat higher GPA than do the university statistics. However, this could be the result of looking at self-reported rather than registrar-reported GPA. We have no reason to believe that any particular serious response bias is present, although

the extent to which we can check this is limited by the nature of the universities' statistics available.

4. VARIABLES AND HYPOTHESES

The outcome variables we examine in this paper are satisfaction with and academic success in the college students attend. Satisfaction here is defined in terms of academic satisfaction since it is only for academic satisfaction that we have measures comparable across the schools (see Berdie, et al., 1970, Astin, 1977, and Bowen, 1978, for discussions of other dimensions of satisfaction with college). It is measured by the extent to which courses are seen as useful (or worth taking) and as interesting (not boring). The usefulness of courses might be related to students' careerism, while satisfaction with the interest of courses might reflect more general satisfaction with education as a consumer good. Although we take the two measures as capturing somewhat different dimensions for academic satisfaction, they are fairly highly correlated: .50, .38, and .35 at Chicago, Northwestern, and Northeastern Illinois respectively.[3] We expect the average perceived usefulness of courses to be higher at schools with greater emphasis on career preparation. The level of satisfaction with the usefulness of courses, then, might be higher at Northeastern Illinois and Northwestern than at Chicago. Levels of satisfaction with the interest of courses might be supposed to be in the opposite order, with students at schools with a greater emphasis on learning for its own sake on the average more satisfied with the interest of courses.

Academic success is measured in the traditional way: by grade point average (GPA). We expect the level of GPA to be about the same over the schools, in line with Astin's (1977) argument that elite institutions

(such as Chicago and Northwestern) tend to give lower grades but have more capable student bodies with the result that on average GPA looks the same over schools. Grades, of course, measure only success at a given university relative to other students there. This is one reason that we expect the determinants of grades to vary over schools. The relativeness of grades, however, should not lead to dismissal of them as important indicators of students' more general success. Grades (as well as the reputation of the college to which one has gone) are still one criterion used to screen applicants for entry level jobs and graduate or professional school, and thus do have meaning beyond the undergraduate career (see, for example, Bowen, 1978:43-44 and Jencks and Riesman, 1968:61-64 on the credentialing function of colleges).

In the next section, we will compare the average levels of satisfaction and success at the three schools to see to what extent there are schools' effects on these variables.

Three sets of variables are used in trying to predict who will be satisfied with the academic life within the universities and who will do well: 1) demographic and social background; 2) students' values, goals, preparation and reasons for selecting a given school; and 3) perception of and involvement in their university milieu.

1) The first set of variables consists of demographic and social background variables. There is a considerable literature on the effects of sex, race, and family background on college entrance and continuance (e.g., Thomas, et al., 1979; Sewell and Shah, 1967; Potter, 1971). In theory, at least, these variables should be orthogonal to success at a

particular school, once a student has been accepted, assuming that students are accepted on the basis of their merit (and fit with the demands of that school) rather than on their ascribed characteristics and social background. There is some evidence that this is true. Sewell and Shah, for example, found that although social background had a stronger influence on college entrance than intelligence, continuing in college depended more on intelligence than on social background. Where admission is influenced by ascribed characteristics, one might expect to see some effect of sex (Feldman, 1974) or race (Roizen, 1975) on achievement. Both Northwestern and Northeastern Illinois have special programs for minority students, with admission criteria and standards of performance being applied differently by race. Thus, one could expect race to have an effect on GPA at these schools. Satisfaction might also be affected by race, sex, and social background. Northwestern and Chicago are middle class and white. All the schools are urban. Students who fit in with these characteristics might find the academic atmosphere more congenial. Such hypotheses are tested below. The specific demographic and social background variables included are: sex, race (white/nonwhite), parental income, mother's education, and size of the place where a student lived at 16.[4]

2) A second set of variables consists of measures of students' values and goals, preparation for college, and reasons for selecting the college they were attending at the time of the surveys. General values toward college are measured by the response to a question asking about relative importance of gaining career versus general knowledge from college. Holding a high esteem for general knowledge might be particularly important

for satisfaction and success within a liberal arts school, such as Chicago, and less important at a school such as Northeastern Illinois which emphasizes the vocational aspect of education. Goals are measured by whether a student plans to continue education beyond a bachelor's. Such aspirations might be a strong motivation for getting good grades, especially in schools where preparation for further schooling is emphasized. Academic preparation is measured by a student's rank in his/her high school class and by the percentage of his/her high school graduating class going on to college. Working hard in high school is likely to predict working hard and doing well in college (Astin, 1971). Munday (1970) found that predictability of college grades from ACT test (for which college rank could be a proxy) was higher at residential schools, at schools with small undergraduate enrollment, and at high mean ACT schools. Therefore, we might expect the effects of high school rank to be greater at Chicago and Northwestern. On the other hand, the more rigorous admission criteria at Chicago and Northwestern could attenuate the effect of high school performance on performance in college. Percent of high school students going on to college has been studied for a long time as a factor possibly affecting college attendance (see discussion in Alexander, et al., 1979). It might continue to affect at least satisfaction with college: those who are used to an environment in which many students have high academic goals might be more satisfied with such environments later. That is, students from high schools with large numbers going on to college might be both more likely to go to Chicago and Northwestern and more satisfied there.

Three selection factors are included in this analysis: whether the

school attended was the first choice, whether the school's academic reputation was important in choosing it, and whether family tradition or wishes were important. Chicago, at least, has some reputation of being a second choice for those who wanted to go to an Ivy League school. Northeastern Illinois might be a second choice for those who would rather go to a school with a better academic reputation but cannot afford the time or money. While most people seem to narrow down their choice of college so that little choice remains at the actual time of application (Jackson, 1978), those who do take a "second" choice might be less satisfied with it. Both Chicago and Northwestern have strong academic reputations. Those who choose them for this reason (and we suspect a high proportion of students there do) may be the ones who are best informed about the schools and about what to expect, and therefore be the most satisfied and successful.[5] Family influence in choosing a college could represent a family more knowledgeable about the world of higher education (as when there is a tradition of attending a certain prestigious school) or the desire of parents to keep a child near home, regardless of the nature of a particular school. Therefore, it is not clear how this variable would influence a student's satisfaction and success.

(3) The third set of factors consists of measures of perception of and involvement in the university milieu. Perception is measured by the extent to which the student sees professors as accessible, students as competitive, and peers as exerting considerable academic pressure. The importance of student-faculty relations in predicting satisfaction with college is well documented (Astin, 1977; Chickering, 1976). This could be related to feelings about the preparation given by the school for

future success: Centra and Rock (1971), for example, found that in schools where faculty-student interaction was perceived to be high, students over-achieved on the graduate record exam relative to their academic ability before college. Competition and peer pressure could also have an influence here. Feelings about faculty accessibility and peers might also be associated with grades, essentially reflecting the student's interpretation of those grades. Involvement in the academic environment might also reflect and influence success and satisfaction (Chickering, 1976 :253-279; Mayhew, 1966). Year in school could represent the extent to which a student has persisted in and adapted to a given school. Hours spent studying and the student's perception of how much he/she studies relative to other students might be expected to especially influence grades. Hours spent employed might have a negative effect on achievement especially at schools such as Chicago and Northwestern which are not set up (as Northeastern Illinois is) for employed students. In the next section we look at levels across schools in these variables before seeing how they influence satisfaction and success within schools.

5. DIFFERENCES AMONG SCHOOLS

Table 1 presents percentage distributions on the dependent variables of academic satisfaction and success, and on variables thought to explain these. On the two common indicators of satisfaction, students at the University of Chicago demonstrate more favorable outcomes than students at either Northeastern Illinois or Northwestern. Students at the University of Chicago are more likely to find most of their courses both useful and interesting, contrary to the expectation that courses at Chicago might be seen as less useful than courses at other schools, given Chicago's

"pure" liberal arts emphasis. Northeastern Illinois and Northwestern students are quite similar in the proportion of courses found useful, but Northwestern students are least likely to find their courses interesting. Levels of satisfaction with the interest of courses are, as expected, much higher for Chicago relative to Northwestern and Northeastern Illinois, given Chicago's greater emphasis on learning for its own sake. In terms of success, students at all three campuses tended to experience success in roughly the same proportions as measured by grade point averages. More students in the Northwestern sample, though, have A's or B's (almost 75 percent) than at Chicago (66 percent) or Northeastern Illinois (61 percent).

Table 1 about here

Differences in the student bodies are consistent with the tuition costs, admission policies, and reputation of the three schools. Students at the two private universities, Chicago and Northwestern, are more likely to have parents with higher incomes and to have more highly educated mothers; students at the public university, Northeastern Illinois, are more likely to have grown up in a large metropolitan area than in the suburbs or a smaller city, and the student body included a large proportion of minorities. Women are a majority at Northeastern Illinois and a minority at Chicago (which is located in an area often considered "unsafe").

Fewer students at Northeastern Illinois are planning to continue their education beyond the Bachelor's level, although one might be surprised that the differences are not greater. The University of Chicago's reputation for its liberal arts core curriculum is reflected in the much

higher proportion of students who value a general liberal arts education, although the academic scholastic reputation of the school was a more important factor for students at both of the private schools. The more universal reputations of Northwestern and Chicago are reflected in the higher proportions of students for whom these were their first choice schools, who ranked higher upon graduation from high school, and who were more likely to attend high schools where more of their classmates were college-bound. Family influence is found much more important for students attending Northwestern, reflecting perhaps more careerism and traditionalism than innovation in their academic goals.

As expected, about half of the students at Northwestern and Chicago are upper division (junior and senior) students, which would be predicted if size of the entering freshman cohort remained constant and students tended to advance regularly each year. Students at Northwestern and Chicago spend more hours per week studying, and correspondingly fewer hour per week working than do students at Northeastern Illinois. Professors are perceived to be accessible by over two-thirds of the students at all three campuses, slightly more at the two private schools which pride themselves on a smaller faculty to student ratio. Competitiveness is perceived to be higher at Northwestern and Chicago, a reflection of the greater number of hours per week studying and also probably the fact that peers' performance is more obvious on residential campuses than on a commuter one. Only at Northwestern, however, is substantial pressure from peers perceived by a majority of the students, and the difference of Northwestern from Northeastern Illinois and Chicago is quite marked. This might reflect the pressure at Northwestern to get into

professional schools.

6. EXPLAINING VARIATION WITHIN SCHOOLS

As the preceeding descriptions show, there are indeed differences among the student bodies at the three universities: large differences between Northeastern Illinois University and the other two, more subtle ones between Chicago and Northwestern. These descriptions tell us what types of persons are attracted to, accepted by, and stay at institutions with different offerings, stereotypes, and student bodies. They also tell us about differences in levels of satisfaction and other attitudes among the three schools. They do not tell us who is most likely to be satisfied with and succeed within the different environments. In this section, we look at predictions of academic satisfaction and success within each school.

Hypotheses about effects of the variables were sketched in the section describing the variables. A further, general hypothesis can be added. The three sets of variables might be thought of as being in temporal sequence: sex, race, and family background are variables that are to a large extent important even before a student has applied for college; goals with respect to a college education and beyond, high school preparation, and reasons and order for selecting a particular school are of most importance at the time of applying to and accepting an offer from a given school; involvement in and perception of academic life in a school are part of the current reality of being an enrolled student there. In general, one would suspect that the last factors, cotemporaneous with satisfaction with and success at some school, would have a greater in-

fluence than factors that may have exerted their influence at early stages of the educational decision making process.

To analyze the effects of these variables, step-wise regression was used. All variables were initially eligible for inclusion. At each step, inclusion was based on forward inclusion criteria. (See Chapter 6 in Draper and Smith, 1966, for a discussion of this and other types of selection.) The idea of this sort of procedure is to find the equation which does the best job of predicting the dependent variable, with the most parsimony. Different procedures can lead to different "best" equations. Here, results will be shown for the equation in which all variables, added in sequence, have a contribution to explained variance which is significant at at least the .05 level.

Tables 2-4 show the coefficients for the "best" predictive equations for each school. Several general comments can be made about Tables 2-4. First, the results are generally consistent with Astin's (1977) findings that greater academic involvement and greater student-faculty interaction are associated with academic satisfaction. The accessibility of professors and amount of study time (either in absolute hours or compared with others) consistently predict satisfaction.[6] Astin, however, controlled for institutional characteristics but did not look at variations in effects of academic involvement and student-faculty interaction among school types. Here we find that the effects of these and other variables do vary according to the type of institution in which the student is enrolled. Second, generally, variables which measure involvement in and perception of the university milieu are stronger predictors of current academic satisfaction and success than other factors.

Tables 2-4 about here

Sex, race, and family background, variables important in the education process even before a student decides to apply to college, were hypothesized to exert little influence on satisfaction and success within a school. In general, this was found to be the case, with the marked exception of the effect of race on academic performance at Northwestern, and the effect of sex on academic performance at Northweastern Illinois. Chicago's uniformly high admissions criteria and Northeastern Illinois' essentially open admission policy may result in greater similarity between minorities and white students on campus than is true for Northwestern with its high general admissions criteria along with special programs for minorities. The findings concerning minorities' poorer academic performance at Northwestern may illustrate the best example of a mis-match between students and universities. Astin (1977), Crossland (1971), and Rosenbaum (1976), among others, have commented that schools with a commitment to increasing their minority population often do not give enough attention to the special needs of such students when they come with inadequate educational preparation. The better performance of females at Northeastern Illinois illustrates perhaps another tracking effect. Females at commuter campuses like Northeastern Illinois may be more likely to be "trapped" by family commitments and lower financial resources, whereas at expensive residential private schools the opportunities and resources of both sexes may be more nearly equivalent (Chickering, 1975: 12-20; Feldman, 1974). At the same time, women tend to receive higher college grades than men, ceteris paribus (Astin, 1971, 1977). It may be that the more stringent selection criteria at the other two schools indeed select some of the better prepared and motivated students of both sexes, such that this difference does not appear there.

Variables important at the time of applying to and accepting an offer from a given school--goals with respect to a college education and beyond, high school preparation, and reasons and order for selecting a particular school--provide an insight into the extent to which schools live up to their reputations for students after they attend. For the extent to which courses are seen as useful or worth taking: educational plans were significant only at Northwestern, which would be consistent with Northwestern's reputation for preprofessional career training; importance of liberal arts knowledge was significant only at Chicago consistent with its curricular emphasis on general learning; and importance of university's academic reputation was significant only at Northeastern Illinois, perhaps indicating that the school is fulfilling its urban mission by providing a college education for students with limited options. Chicago appears to live up to its reputation with respect to the extent to which courses are seen as interesting as well. For this dependent variable, of all the variables important at the time of application and acceptance, only educational plans and belief in the importance of liberal arts general education were significant, and only at Chicago. For academic performance, Northwestern's eclectic commitment to excellence in scholarship and preprofessional training is reflected in the dual importance of belief in the importance of liberal arts general knowledge and high school class rank. At Chicago and Northeastern Illinois, with their more specialized albeit very different missions, the match between success and school is relatively more straightforward. Students with better high school backgrounds do better at Northeastern Illinois; students with stronger beliefs in the importance of liberal arts general knowledge do better at

Chicago.

Finally, the current reality of being an enrolled student--the university milieu as measured by involvement in and perception of academic life--predicts both satisfaction and success. Perceived accessibility of professors and study time are important across all three schools, indicating that feelings of belonging to and investment in the academic life of a university are important to all students regardless of the specific university attended. Only at Northwestern does the combination of experience with the university and the "real world" of work affect satisfaction and performance. As year in school advances, Northwestern students' grade point averages increase while their evaluation of courses as worth taking declines. Perceived competition for grades also decreases the extent to which Northwestern students evaluate courses as worth taking and amount of time spent working decreases the extent to which they find courses interesting. With Chicago's emphasis on liberal arts general education as a goal in itself, perhaps students there do not experience the tension between scholarship and employment as acutely as Northwestern students do while they remain in school; conversely, perhaps students attending the Northwestern Illinois commuter campus never really leave the "real world" sufficiently to experience a liberal arts alternative as a tension in the first place.

7. SUMMARY AND DISCUSSION

In this paper we have compared students' academic success and satisfaction at three schools: two well-regarded, expensive, selective private schools that vary somewhat in their admissions policy and emphasis on

specific career preparation and one public, relatively inexpensive, unselective, community oriented university. As would be expected, students across the three schools differ in their background characteristics, their values and goals, and their responses to their school milieu. As well, there are variations in which students within each school get high grades and are academically satisfied. We see considerable influence of studying and perceived faculty accessibility on academic satisfaction and grades at all three schools. At Northwestern, however, race also has an effect, as does maturation (in the sense of employment and year in school). At Chicago, commitment to general learning and to achieving a higher degree are important, even to the exclusion of an impact of high school class rank on grades. At Northeastern Illinois, sex also has an impact on grades, and the choice of Northeastern Illinois for its academic reputation on the perceived usefulness of courses.

To some extent, the similarities are consistent with past research while the differences are consistent with the differences in the images of the three schools. There is thus some support for the idea that students who are well-matched to their schools like and do better in their academic milieu. The alternative hypothesis is that students adapt or drop out. Those who have greater involvement in their academic life are more satisfied and do get higher grades but only at Northwestern does year in school--representing the persistence of a student--have any effect. With longitudinal attitudinal data, one could trace the process leading to dropping out and transferring, as well as the selection process. We have taken only a slice from the schooling process.

Although we have chosen to focus intensively on a small number of

schools, rather than extensively on a larger sample, we realize that we are still only skimming the surface of the ways in which a students' learning and social environment are associated with satisfaction and success. There is considerable research on how intra-university environments are sought by and affect students. Students in different departments or administrative units within one school may face entirely different learning milieus. Likewise, residential units can vary in the support and social life they provide students. (See, for example, Hearn, 1980.) For the schools we studied, the undergraduate populations are relatively small (Chicago has about 2550, Northeastern Illinois 5700, Northwestern 6650), and have well developed stereotypes of "student life." One could go within the schools further, to case studies of case studies. Often people have aggregated those in, say given majors across schools, gaining precision with respect to the parameter of the environment but losing sight of the context of that micro-environment.

As usual, only a combination of case studies and larger surveys, and especially over-time data on both objective and subjective factors, give one a grasp of the ways in which students pass through educational systems. We have contributed merely one piece of the puzzle.

NOTES

[1]In the other two studies, survey packets included a self-addressed, posted envelope in which students were to return the completed questionnaires. Because of the very low survey budget at Northeastern Illinois, students there were asked to return their questionnaires to on-campus drop boxes.

[2]Data were also collected from a sample of 250 students who had withdrawn from the College, but they are not used in this paper.

[3]At Northwestern and Northeastern Illinois, the question asks about the proportion of courses worth taking, while at Chicago it asks for the extent of agreement with a statement that courses are useful. One might argue that "worth" can also have a consumption meaning and overlaps more with degree of interest (lack of boringness) of courses than does usefulness. The correlations show that this is not the case--the correlations between the two satisfaction measures is actually higher at Chicago than at the other two schools.

[4]Other measures of social background (such as father's education and occupation, and number of siblings) were available, but contained a large number of missing responses. Analyses done including other demographic and social measures do not differ greatly from those presented here.

[5]It is not clear what choosing Northeastern Illinois for its academic reputation would mean. It could be that some people select it precisely because it is not perceived as being academically rigorous. On the other hand, some could perceive anything beyond a two-year school as having

a good academic reputation. Some might be disappointed in their selection on this basis.

[6]Of course, with cross-sectional data, one cannot be absolutely sure of the direction of the causality.

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Table 1

Comparison of Campus Environments on Common Variables
(% Students Reporting Attribute)

	Northwestern (N=325) %	Northeastern Illinois (N=225) %	Chicago (N=287)* %
Satisfaction and Success			
Find most courses useful, worth taking	62.9	58.7	65.5
Find most courses interesting, not boring	44.7	57.7	84.7
Grade point average A or B	73.4	60.7	65.7
Demographics and Socioeconomic Background			
Male	52.1	33.2	61.5
Minority race member	12.9	22.5	10.3
Parents' annual income $25,000 or more	51.6	39.9	57.0
Mother educated beyond high school	70.7	23.2	77.9
Living in large city (250,000 or more population) during high school	18.1	69.1	29.5
Goals and Selection			
Plan to continue education beyond Bachelors	65.4	59.4	69.3
General liberal arts knowledge important	56.3	40.9	97.2
Academic scholastic reputation important	89.7	32.0	80.1
First choice school	76.5	52.2	69.3
Top 5% high school rank	60.1	11.6	51.6
75% or more of high school class to college	42.9	25.9	38.4
Family influence important	31.7	9.3	6.7
Campus Milieu			
Junior or senior year of school	49.3	64.9	49.3
Spend 16 hours or more per week studying	74.6	27.7	64.1
Perceive selves as studying more than others	27.1	33.1	21.5
Work 21 hours or more per week	8.1	38.7	4.5
Perceive professors to be accessible	71.7	68.0	84.0
Perceive quite a bit of competitiveness	80.7	64.5	84.7
Perceive substantial pressure from peers	55.7	16.9	20.9

*N's vary slightly due to missing data; adjusted frequencies used for percentaging.

Table 2

Demographic variables, goals, preparation, and university selection variables, and perception of, and involvement in, university milieu as predictors of academic satisfaction. (Variables included are significant at the .05 level or better.)

Dependent variable: Extent to which courses are seen as "worth taking" or "useful."[a]

University:	Northwestern University			University of Chicago			Northeastern Illinois University		
	B	s.e.B	Beta	B	s.e.B	Beta	B	s.e.B	Beta
Independent variables:									
Demographic[b]									
Sex (female)									
Race (minority)									
Parental income									
Mother's education	-.051	.023	-.128						
Size of place of residence									
Goals, preparation, and selection[c]									
Educational plans	.200	.087	.133						
Liberal arts knowledge important				1.434	.451	.215			
Importance of university's academic reputation							.256	.087	.236
Whether school first choice									
High school class rank									
% high school class going to college									
Importance of family influence on choice									
University milieu[d]									
Year at university	-.126	.036	-.204						
Hours/week study	.189	.069	.164						
Study time compared with others	N.A.	N.A.	N.A.				.208	.094	.177
Hours/week employed									
Accessibility of professors	.109	.048	.132	.233	.080	.198			
Competition for grades	-.120	.050	-.141						
Peer pressure									
Constant	2.860			3.500			1.424		
R^2		.151			.088			.098	
N		266			202			147	

[a]Extent to which courses are seen as "worth taking" or "useful": 1=no courses worth taking or strongly disagreeing that courses were useful, 5=all courses worth taking (NU, NIU) or strongly agreeing that most courses are useful (UC). No answer or "not sure" responses were coded as 3.

[b]Demographic variables. Sex: 1=male, 2=female; Race: 0=white, 1=other; Parental income: 1=less than $7500 a year before taxes, 8=$50,000 and above; Highest level of education (completed): 1=less than high school, 8=doctorate; Size of place where student's parents lived when he/she was 16: 1=farm, 5=large city.

[c]Variables measuring goals, preparation, and selection. Educational plans: 0=a Bachelor's degree or less, 1=some post-bachelor's study; Type of knowledge considered important: 1="general knowledge and appreciation of ideas" more important for an undergraduate (NU, NIU), or "Give me a broad knowledge of the arts and sciences" seen as important to receive from college (UC), 0=acquiring "knowledge directly related to a future career" more important or "broad knowledge" of little or no importance; Importance of university's academic reputation in selecting the university in which the student is currently enrolled: 1=not important, 3=very important (NU, NIU) or strongly positive (UC); Whether school currently attending was first choice of schools to attend: 1=no, 2=yes; Rank in high school class: 1=top 5%, 0=other; Percent of high school class going on to college: 1=less than 25% (NU, NIU) or less than 30%, 4=more than 75% (NU, NIU) or more than 70% (UC); Importance of family influence in selecting a college: 1=not important, 3=important.

[d]Variables measuring university milieu. Year at university: 1=first year (freshman) or equivalent, 4=fourth year (senior) or equivalent; Hours spent studying a week: 1=5 hours or less, 2=6-15 hours, 3=over 15 hours; Comparative study time: 1=study less than peers, 3=study more than peers; Hours employed a week: 1=10 hours or less, 2=11-20 hours, 3=over 20 hours; Accessibility of professors: 1=strongly disagree that professors are accessible or strongly agree that they are inaccessible, 5=strongly agree that professors are accessible (UC) or strongly disagree that they are inaccessible; Competition for grades: 1=strongly disagree that students are competitive or a response that there is no competition for grades, 5=strongly agree that students are very competitive (UC) or that there is a great deal of competition for grades (NU, NIU); Peer pressure: 1=little or no pressure, 3=much pressure from peers to achieve academically. Study time compared with others not included among Northwestern variables.

Table 3

Demographic variables, goals, preparation and selection variables, and perception of, and involvement in, university milieu as predictors of academic satisfaction.

Dependent variable: Extent to which courses are seen as interesting.[a]

University:	Northwestern University			University of Chicago			Northeastern Illinois University		
	B	s.e.B	Beta	B	s.e.B	Beta	B	s.e.B	Beta
Independent variables:[b]									
Demographic									
Sex (female)									
Race (minority)									
Parental income									
Mother's education									
Size and place of residence									
Goals and selection									
Educational plans				.407	.149	.191			
Liberal arts knowledge important				1.241	.345	.237			
Importance of university's academic reputation									
Whether first choice school									
High school class rank									
I high school class going to college									
Importance of family influence on choice									
University milieu									
Year at university									
Hours/week study	.226	.075	.180	.259	.119	.153			
Study time compared with others	N.A.	N.A.	N.A.						
Hours/week employed	-.197	.074	-.158				.233	.105	.179
Accessibility of professors	.126	.053	.140	.124	.061	.134	.176	.079	.180
Competition for grades									
Peer pressure									
Constant	2.692			3.823			3.310		
R^2		.094			.155			0.072	
N		266			202			147	

[a]Extent to which courses are seen as interesting: 1=almost always bored, strongly agree usually bored or strongly disagree most courses interesting, 5=almost never bored in class (NU) or strongly disagree response to "I am usually bored in class" (NIU) or strongly agree response to "I find most courses interesting"(UC).

[b]For scoring of independent variables, see Table 2.

Table 4

Demographic variables, goals, preparation and selection variables, and perception of, and involvement in, university milieu as predictors of academic success.

Dependent variable: Grade Point Average[a]

University:	Northwestern University			University of Chicago			Northeastern Illinois University		
	B	s.e.B	Beta	B	s.e.B	Beta	B	s.e.B	Beta
Independent variables:[b]									
Demographic									
Sex (female)							.425	.175	.185
Race (minority)	-.571	.159	-.208						
Parental Income									
Mother's education				.069	.032	.140			
Size and place of residence									
Goals and selection									
Educational plans									
Liberal arts knowledge important	.242	.107	.131	.326	.134	.161			
Importance of university's academic reputation									
Whether school first choice									
High school class rank	.304	.111	.162				.810	.249	.249
% high school class going to college									
Importance of family influence on choice									
University milieu									
Year at university	.163	.046	.207						
Hours/week study							.260	.121	.165
Study time compared with others	N.A.	N.A.	N.A.	.409	.084	.322			
Hours/week employed									
Accessibility of professors	.173	.061	.164				.273	.084	.248
Competition for grades									
Peer pressure									
Constant	2.446			1.862			3.047		
R^2		.145			.178			.179	
N		266			202			147	

[a]Grade point average on a 6-point scale: 1=1.74 or less (1.79 or less for NU), 6=3.50 and up (3.60 and up in the NU data).

[b]For scoring of independent variables, see Table 2.